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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,010	01/18/2002	Arup Acharya	YOR920020015US1	2109

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Louis P. Herzberg, Intellectual Property Law Dept.
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EXAMINER
BAKER, PAUL A

ART UNIT	PAPER NUMBER
2188	

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2002*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-24* is/are rejected.

7)☒ Claim(s) *3* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: page 7 line

22 element 209 should be labeled as LUN2.

Appropriate correction is required.

Specification

The disclosure is objected to because of the following informalities: Figures 5a

and 5b have no description within the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-24 contains the trademark/trade name iSCSI. Where a trademark or

trade name is used in a claim as a limitation to identify or describe a particular material

or product, the claim does not comply with the requirements of 35 U.S.C. 112, second

paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope

is uncertain since the trademark or trade name cannot be used properly to identify any

particular material or product. A trademark or trade name is used to identify a source of

goods, and not the goods themselves. Thus, a trademark or trade name does not

identify or describe the goods associated with the trademark or trade name. In the

present case, the trademark/trade name is used to identify/describe SCSI encapsulated

within the TCP/IP protocol and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,2,4-24 are rejected under 35 U.S.C. 102(e) as being anticipated by

Pham et al, US PGPUB 2003/0115447.

In regards to claim 1, Pham discloses a method comprising accessing virtual

iSCSI storage, including the steps of:

defining at least one physical logical unit number (LUN) on a physical storage

device having an device IP address in paragraph 86;

associating a unique TCP port number with each said at least one physical LUN

in paragraph 86;

replacing a first LUN identifier specified in said iSCSI command with a second

LUN identifier associated with said given TCP port number in paragraph 52;

establishing a unique IP address at which a virtual LUN is accessed from a host in paragraph 86;

identifying a block TCP port number with each block range of said virtual LUN;

mapping a SCSI command to one or more iSCSI/TCP connections having said unique IP address and the block TCP port number identified with said each block range referenced by said SCSI command in paragraphs 53, 87 and 88; and

substituting said unique IP address and said block TCP port number with said device IP address and said given TCP port number on packets between said host and said storage devices in paragraph 51 & 52.

In regards to claim 2, Pham discloses further comprising forming a correspondence between an iSCSI command received on a given TCP port with a particular physical LUN associated with said given TCP port in paragraph 88.

In regards to claim 4, Pham discloses the step of mapping includes converting a single SCSI command to one iSCSI connection per block range accessed in paragraph 47.

In regards to claim 5, Pham discloses the step of substituting includes looking up a local substitution map at a gateway having a mapping between incoming destination IP address and port number and an outgoing device IP address and port number in paragraph 86.

In regards to claim 6, Pham discloses a migration of a physical LUN from a source storage device to a target storage device requires only updating said substitution map to reflect new location of said physical LUN in paragraph 52.

In regards to claim 7, Pham discloses:

employing IPSeC processing support at the host;

employing IPSeC processing support at a gateway between said host and said storage device; and

forming an IPSec tunnel between said host and said gateway in figure 1;

In regards to claim 8, Pham discloses a method comprising providing support at a physical storage device for accessing virtual iSCSI storage, including the steps of:

defining at least one physical logical unit (LUN) on the physical storage device having an device IP address in paragraph 86;

associating a unique TCP port number with each said at least one physical LUN in paragraph 86; and

replacing a first LUN identifier specified in said iSCSI command with a second LUN identifier associated with said given TCP port number in paragraph 51 & 52.

In regards to claim 9, Pham discloses a method comprising providing support at a host for accessing virtual iSCSI storage, including the steps of:

establishing a unique IP address at which a virtual LUN is accessed from the host in paragraph 86;

identifying a block TCP port number with each block range of said virtual LUN in paragraph 86; and

mapping a SCSI command to one or more iSCSI/TCP connections having said unique IP address and the block TCP port number identified with said each block range referenced by said SCSI command in paragraph 51 & 52;

In regards to claim 10, Pham discloses a method comprising providing support at an intermediate gateway device between a host and a storage device for accessing virtual iSCSI storage in figure 1 element 14, including the step of substituting a host-specified IP address and a host-specified TCP port number with a device IP address and a TCP port number within that device according to a substitution table describing the virtual to physical storage mapping for incoming packets before forwarding said packets in paragraphs 86-88.

In regards to claim 11, Pham discloses an apparatus comprising:

a conversion module at a physical storage device for accessing virtual iSCSI storage, coupled to means for defining at least one physical logical unit (LUN) on the physical storage device having an device IP address; and coupled to means for associating a unique TCP port number with each said at least one physical LUN in figure 1 element 14 in combination with paragraph 86;

said conversion module to replace a first LUN identifier specified in said iSCSI

command with a second LUN identifier associated with said given TCP port number in

paragraph 51 & 52.

In regards to claim 12, Pham discloses an apparatus at a physical storage device

for accessing virtual iSCSI storage, comprising:

means for replacing a first LUN identifier specified in an iSCSI command with a

second LUN identifier associated with a given TCP port number included in said iSCSI

command in paragraph 51 & 52;

means for defining at least one physical logical unit (LUN) on the physical

storage device having an device IP address in paragraph 86; and

means for associating a unique TCP port number with each said at least one

physical LUN in paragraph 86.

In regards to claim 13, Pham discloses an apparatus comprising a virtualization

module at a host for accessing virtual iSCSI storage, said virtualization module includes:

means for establishing a unique IP address at which a virtual LUN is accessed

from the host in paragraph 86;

means for identifying a block TCP port number with each block range of said

virtual LUN in paragraph 86; and

means for mapping a SCSI command to one or more iSCSI/TCP connections having said unique IP address and the block TCP port number identified with said each block range referenced by said SCSI command in paragraph 51 & 52.

In regards to claim 14, Pham discloses an apparatus comprising a virtualization module at a host for accessing virtual iSCSI storage, said virtualization module includes:

a control module establishing a unique IP address at which a virtual LUN is accessed from the host, and for identifying a block TCP port number with each block range of said virtual LUN figure 3 element 74; and

a driver module for mapping a SCSI command to one or more iSCSI/TCP connections having said unique IP address and the block TCP port number identified with said each block range referenced by said SCSI command figure 3 elements 66 and 70.

In regards to claim 15, Pham discloses an apparatus comprising:

an address translation module at an intermediate gateway device between a host and a storage device for accessing virtual iSCSI storage, said address translation module having a substitution table describing a virtual to physical storage mapping, said address translation module to replace a host-specified IP address and a host-specified TCP port number with a device IP address and a TCP port number within said intermediate gateway device according to the substitution table for incoming packets before forwarding said incoming packets in paragraph 86.

In regards to claim 16, An apparatus at an intermediate gateway device between a host and a storage device for accessing virtual iSCSI storage in figure 1 element 14, said intermediate gateway device having a substitution table, said substitution table describing a virtual to physical storage mapping of IP addresses and TCP port numbers in paragraph 86;

said apparatus comprising:

means for replacing a host-specified IP address and a host-specified TCP port number, with an IP address and a TCP port number of the storage device, within said intermediate gateway device, according to the substitution table for incoming packets before forwarding said incoming packets in paragraph 51 & 52.

In regards to claim 17, Pham discloses an article of manufacture comprising a computer usable medium having computer readable program code means embodied therein for causing accessing virtual iSCSI storage, the computer readable program code means in said article of manufacture comprising computer readable program code means for causing a computer to effect the steps of claim 1 is inherent since figure 1 element 74 must have a computer usable medium having computer readable code to provide the steps outlined in claim 1.

In regards to claim 18, Pham discloses a program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to

perform method steps for accessing virtual iSCSI storage, said method steps

comprising the steps of claim 1 is inherent since figure 1 element 74 must have a

computer usable medium having computer readable code to provide the steps outlined

in claim 1.

In regards to claim 19, Pham discloses a computer program product comprising

a computer usable medium having computer readable program code means embodied

therein for causing LUN identifier substitution, the computer readable program code

means in said computer program product comprising computer readable program code

means for causing a computer to effect the functions of claim 13 is inherent since figure

1 element 74 must have a computer usable medium having computer readable code to

provide the steps outlined in claim 13.

In regards to claim 20, Pham discloses a computer program product comprising

a computer usable medium having computer readable program code means embodied

therein for causing LUN identifier substitution, the computer readable program code

means in said computer program product comprising computer readable program code

means for causing a computer to effect the functions of claim 14 is inherent since figure

1 element 74 must have a computer usable medium having computer readable code to

provide the steps outlined in claim 14.

In regards to claim 21, Pham discloses a computer program product comprising a computer usable medium having computer readable program code means embodied therein for causing SCSI command mapping, the computer readable program code means in said computer program product comprising computer readable program code means for causing a computer to effect the functions of claim 15 is inherent since figure 1 element 74 must have a computer usable medium having computer readable code to provide the steps outlined in claim 15.

In regards to claim 22, Pham discloses a computer program product comprising a computer usable medium having computer readable program code means embodied therein for causing SCSI command mapping, the computer readable program code means in said computer program product comprising computer readable program code means for causing a computer to effect the functions of claim 16 is inherent since figure 1 element 74 must have a computer usable medium having computer readable code to provide the steps outlined in claim 16.

In regards to claim 23, Pham discloses a computer program product comprising a computer usable medium having computer readable program code means embodied therein for causing address substitution, the computer readable program code means in said computer program product comprising computer readable program code means for causing a computer to effect the functions of claim 17 is inherent since figure 1 element

74 must have a computer usable medium having computer readable code to provide the steps outlined in claim 17.

In regards to claim 24, Pham discloses a computer program product comprising a computer usable medium having computer readable program code means embodied therein for causing address substitution, the computer readable program code means in said computer program product comprising computer readable program code means for causing a computer to effect the functions of claim 18 is inherent since figure 1 element 74 must have a computer usable medium having computer readable code to provide the steps outlined in claim 18.

Allowable Subject Matter

Claim 3 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A Baker whose telephone number is (703)305-3304. The examiner can normally be reached on M-F 10am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (703)306-2903. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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PB

**MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER**